

**Erratum: Cold Nuclear Matter Effects on J/ψ Production as Constrained by
Deuteron-Gold Measurements at $\sqrt{s_{NN}} = 200$ GeV
Phys. Rev. C77, 024912 (2008)**

A. Adare, S.S. Adler, S. Afanasiev, C. Aidala, N.N. Ajitanand, Y. Akiba, H. Al-Bataineh, J. Alexander, A. Al-Jamel, K. Aoki, L. Aphecetche, R. Armendariz, S.H. Aronson, J. Asai, E.T. Atomssa, R. Averbeck, T.C. Awes, B. Azmoun, V. Babintsev, G. Baksay, L. Baksay, A. Baldisseri, K.N. Barish, P.D. Barnes, B. Bassalleck, S. Bathe, S. Batsouli, V. Baublis, F. Bauer, A. Bazilevsky, S. Belikov,* R. Bennett, Y. Berdnikov, A.A. Bickley, M.T. Bjornald, J.G. Boissevain, H. Borel, K. Boyle, M.L. Brooks, D.S. Brown, N. Bruner, D. Bucher, H. Buesching, V. Bumazhnov, G. Bunce, J.M. Burward-Hoy, S. Butsyk, X. Camard, S. Campbell, P. Chand, B.S. Chang, W.C. Chang, J.-L. Charvet, S. Chernichenko, J. Chiba, C.Y. Chi, M. Chiu, I.J. Choi, R.K. Choudhury, T. Chujo, P. Chung, A. Churn, V. Cianciolo, C.R. Cleven, Y. Cobigo, B.A. Cole, M.P. Comets, P. Constantin, M. Csanád, T. Csörgő, J.P. Cussonneau, T. Dahms, K. Das, G. David, F. Deák, M.B. Deaton, K. Dehmelt, H. Delagrange, A. Denisov, D. d'Enterria, A. Deshpande, E.J. Desmond, A. Devismes, O. Dietzsch, A. Dion, M. Donadelli, J.L. Drachenberg, O. Drapier, A. Drees, A.K. Dubey, A. Durum, D. Dutta, V. Dzhordzhadze, Y.V. Efremenko, J. Egdemir, F. Ellinghaus, W.S. Emam, A. Enokizono, H. En'yo, B. Espagnon, S. Esumi, K.O. Eyser, D.E. Fields, C. Finck, M. Finger, Jr., M. Finger, F. Fleuret, S.L. Fokin, B.D. Fox, Z. Fraenkel,* J.E. Frantz, A. Franz, A.D. Frawley, K. Fujiwara, Y. Fukao, S.-Y. Fung, T. Fusayasu, S. Gadrat, I. Garishvili, M. Germain, A. Glenn, H. Gong, M. Gonin, J. Gosset, Y. Goto, R. Granier de Cassagnac, N. Grau, S.V. Greene, M. Grosse Perdekamp, T. Gunji, H.-Å. Gustafsson, T. Hachiya, A. Hadj Henni, C. Haegemann, J.S. Haggerty, H. Hamagaki, R. Han, A.G. Hansen, H. Harada, E.P. Hartouni, K. Haruna, M. Harvey, E. Haslum, K. Hasuko, R. Hayano, M. Heffner, T.K. Hemmick, T. Hester, J.M. Heuser, X. He, P. Hidas, H. Hiejima, J.C. Hill, R. Hobbs, M. Hohlmann, W. Holzmann, K. Homma, B. Hong, A. Hoover, T. Horaguchi, D. Hornback, T. Ichihara, V.V. Ikonnikov, K. Imai, M. Inaba, Y. Inoue, M. Inuzuka, D. Isenhowe, L. Isenhowe, M. Ishihara, T. Isobe, M. Issah, A. Isupov, B.V. Jacak,*† J. Jia, J. Jin, O. Jinnouchi, B.M. Johnson, S.C. Johnson, K.S. Joo, D. Jouan, F. Kajihara, S. Kametani, N. Kamihara, J. Kamin, M. Kaneta, J.H. Kang, H. Kanou, K. Katou, T. Kawabata, D. Kawall, A.V. Kazantsev, S. Kelly, B. Khachaturov, A. Khanzadeev, J. Kikuchi, D.H. Kim, D.J. Kim, E. Kim, G.-B. Kim, H.J. Kim, E. Kinney, A. Kiss, E. Kistenev, A. Kiyomichi, J. Klay, C. Klein-Boesing, H. Kobayashi, L. Kochenda, V. Kochetkov, R. Kohara, B. Komkov, M. Konno, D. Kotchetkov, A. Kozlov, A. Král, A. Kravitz, P.J. Kroon, J. Kubart, C.H. Kuberg,* G.J. Kunde, N. Kurihara, K. Kurita, M.J. Kweon, Y. Kwon, G.S. Kyle, R. Lacey, Y.-S. Lai, J.G. Lajoie, A. Lebedev, Y. Le Bornec, S. Leckey, D.M. Lee, M.K. Lee, T. Lee, M.J. Leitch, M.A.L. Leite, B. Lenzi, H. Lim, T. Liška, A. Litvinenko, M.X. Liu, X. Li, X.H. Li, B. Love, D. Lynch, C.F. Maguire, Y.I. Makdisi, A. Malakhov, M.D. Malik, V.I. Manko, Y. Mao, G. Martinez, L. Mašek, H. Masui, F. Matathias, T. Matsumoto, M.C. McCain, M. McCumber, P.L. McGaughey, Y. Miake, P. Mikeš, K. Miki, T.E. Miller, A. Milov, S. Mioduszewski, G.C. Mishra, M. Mishra, J.T. Mitchell, M. Mitrovski, A.K. Mohanty, A. Morreale, D.P. Morrison, J.M. Moss, T.V. Moukhanova, D. Mukhopadhyay, M. Muniruzzaman, J. Murata, S. Nagamiya, Y. Nagata, J.L. Nagle, M. Naglis, I. Nakagawa, Y. Nakamiya, T. Nakamura, K. Nakano, J. Newby, M. Nguyen, B.E. Norman, A.S. Nyanin, J. Nystrand, E. O'Brien, S.X. Oda, C.A. Ogilvie, H. Ohnishi, I.D. Ojha, H. Okada, K. Okada, M. Oka, O.O. Omiwade, A. Oskarsson, I. Otterlund, M. Ouchida, K. Oyama, K. Ozawa, R. Pak, D. Pal, A.P.T. Palounek, V. Pantuev, V. Papavassiliou, J. Park, W.J. Park, S.F. Pate, H. Pei, V. Penev, J.-C. Peng, H. Pereira, V. Peresedov, D.Yu. Peressounko, A. Pierson, C. Pinkenburg, R.P. Pisani, M.L. Purschke, A.K. Purwar, J.M. Qualls, H. Qu, J. Rak, A. Rakotozafindrabe, I. Ravinovich, K.F. Read, S. Rembeczki, M. Reuter, K. Reygers, V. Riabov, Y. Riabov, G. Roche, A. Romana,* M. Rosati, S.S.E. Rosendahl, P. Rosnet, P. Rukoyatkin, V.L. Rykov, S.S. Ryu, B. Sahlmueller, N. Saito, T. Sakaguchi, S. Sakai, H. Sakata, V. Samsonov, L. Sanfratello, R. Santo, H.D. Sato, S. Sato, S. Sawada, Y. Schutz, J. Seele, R. Seidl, V. Semenov, R. Seto, D. Sharma, T.K. Shea, I. Shein, A. Shevel, T.-A. Shibata, K. Shigaki, M. Shimomura, K. Shoji, A. Sickles, C.L. Silva, D. Silvermyr, C. Silvestre, K.S. Sim, C.P. Singh, V. Singh, S. Skutnik, M. Slunečka, A. Soldatov, R.A. Soltz, W.E. Sondheim, S.P. Sorensen, I.V. Sourikova, F. Staley, P.W. Stankus, E. Stenlund, M. Stepanov, A. Ster, S.P. Stoll, T. Sugitate, C. Suire, J.P. Sullivan, J. Sziklai, T. Tabaru, S. Takagi, E.M. Takagui, A. Taketani, K.H. Tanaka, Y. Tanaka, K. Tanida, M.J. Tannenbaum, A. Taranenko, P. Tarján, T.L. Thomas, M. Togawa, A. Toia, J. Tojo, L. Tomásek, H. Torii, R.S. Towell, V.-N. Tram, I. Tserruya, Y. Tsuchimoto, H. Tydesjö, N. Tyurin, T.J. Uam, C. Vale, H. Valle, H.W. vanHecke, J. Velkovska, M. Velkovsky, R. Vertesi, V. Veszprémi, A.A. Vinogradov, M. Virius, M.A. Volkov, V. Vrba, E. Vznuzdaev,

M. Wagner, D. Walker, X.R. Wang, Y. Watanabe, J. Wessels, S.N. White, N. Willis, D. Winter, F.K. Wohn, C.L. Woody, M. Wysocki, W. Xie, Y.L. Yamaguchi, A. Yanovich, Z. Yasin, J. Ying, S. Yokkaichi, G.R. Young, I. Younus, I.E. Yushmanov, W.A. Zajc, O. Zaudtke, C. Zhang, S. Zhou, J. Zimányi,* L. Zolin, and X. Zong
(PHENIX Collaboration)
(Dated: March 27, 2009)

PACS numbers: 25.75.Dw

All of the experimental data points presented in the original paper are correct and unchanged (including statistical and systematic uncertainties). However, herein we correct a comparison between the experimental data and a theoretical picture using a set of shadowing models for the nuclear parton distribution functions (PDFs) combined with a nuclear breakup cross section (σ_{breakup}). Under the assumption that a given modified nuclear PDF is correct, we put constraints on the σ_{breakup} values as presented in the original paper in Table V, Section VI. In the code that calculated these constrained σ_{breakup} values we discovered a mistake, which we now correct.

Table I shows the new results, for which all of the most probable σ_{breakup} values differ by less than 0.4 mb from those originally presented. However, the one standard deviation uncertainties (that include contributions from both the statistical and systematic uncertainties on the experimental data points) are approximately 30-60% larger than originally reported.

Thus, the one standard deviation uncertainty bands on σ_{breakup} in Figs. 8-11 of the original paper need updating with the corrected constraints. Figures 1-4 here show the corrected constraints. Although the uncertainties are significantly larger with these corrected σ_{breakup} values, there is no qualitative change in the physics conclusions to be drawn from comparisons between these theoretical models (and their extrapolation) and the Au+Au and Cu+Cu measurements. Stronger conclusions can only come from future higher statistics data for d +Au collisions. Note that no correction is needed for results from the data-driven method in Fig. 13 of the original paper.

TABLE I: Most probable values and one standard deviations of σ_{breakup} assuming two different shadowing models, from a fit to minimum bias R_{dAu} points as a function of rapidity (Fig. 1), and fits to R_{dAu} as a function of N_{coll} in three separate rapidity bins (Fig. 2).

Fit Range in y	EKS (mb)	NDSG (mb)
All	$2.8^{+2.3}_{-2.1}$	$2.6^{+2.2}_{-2.6}$
$[-2.2, -1.2]$	$5.2^{+2.4}_{-2.8}$	$3.3^{+2.9}_{-2.7}$
$[-0.35, 0.35]$	$2.3^{+3.6}_{-1.9}$	$0.8^{+3.6}_{-0.8}$
$[1.2, 2.2]$	$3.4^{+2.0}_{-2.5}$	$3.5^{+2.0}_{-2.7}$

*Deceased

†PHENIX Spokesperson: jacak@skipper.physics.sunysb.edu

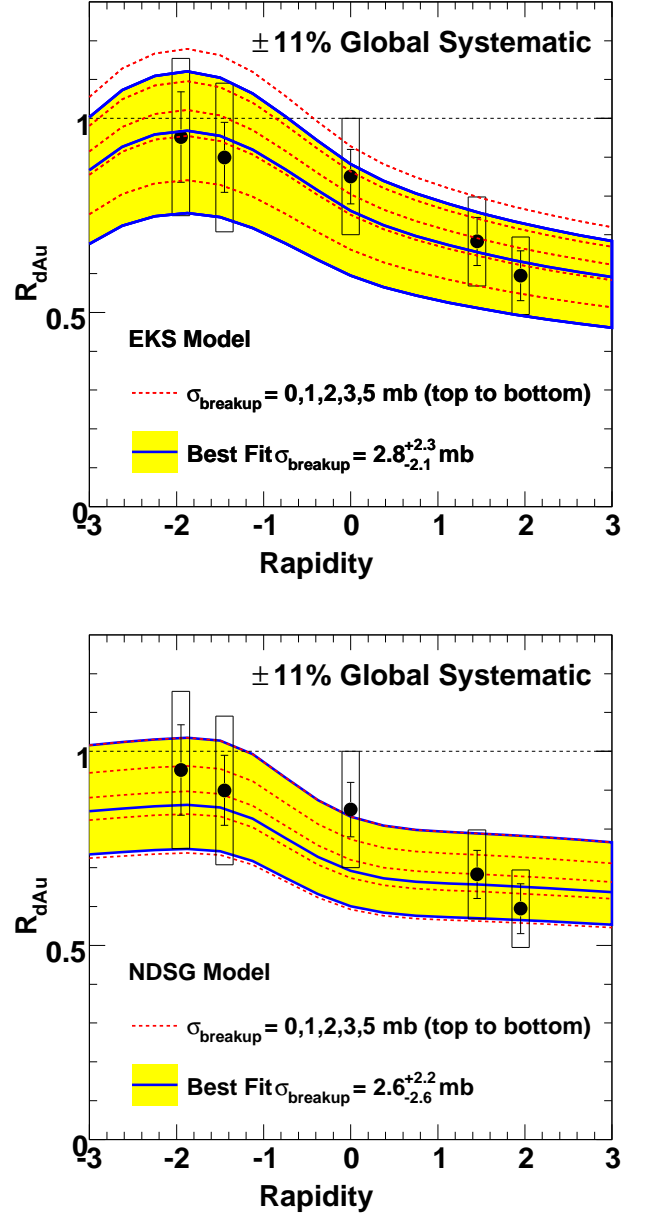


FIG. 1: (color online) R_{dAu} data compared to various theoretical curves for different σ_{breakup} values. Also, shown as a band are the range of σ_{breakup} found to be consistent with the data within one standard deviation. The top panel is a comparison for EKS shadowing [1], while the bottom panel is for NDSG shadowing [2].

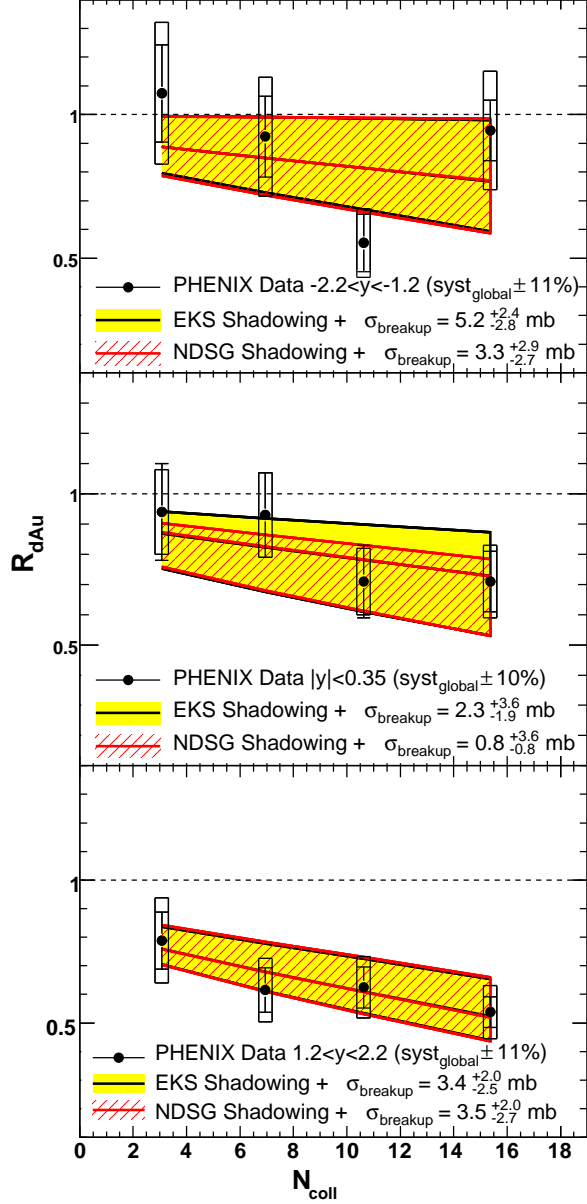


FIG. 2: (color online) R_{dAu} data as a function of N_{coll} for three different rapidity ranges. Overlaid are theoretical curves representing the best fit $\sigma_{breakup}$ values as determined in each rapidity range separately, utilizing EKS and NDSG nuclear PDFs and a simple geometric dependence. Also, shown as bands are the range of $\sigma_{breakup}$ found to be consistent with the data within one standard deviation.

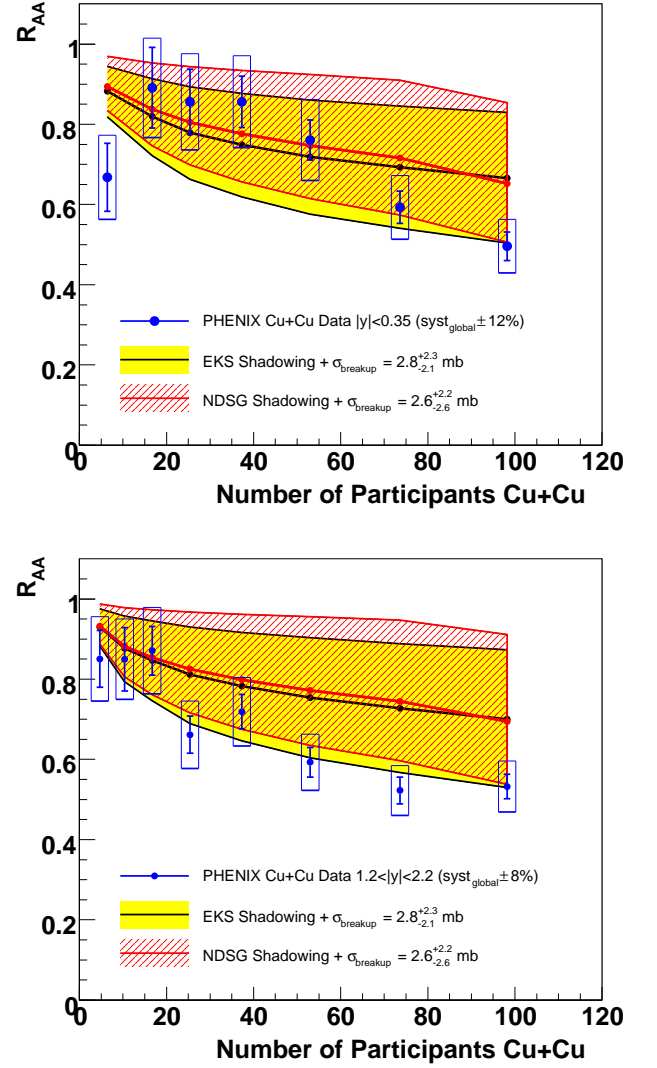


FIG. 3: (color online) R_{AA} for Cu+Cu [3] collisions compared to a band of theoretical curves for the $\sigma_{breakup}$ values found to be consistent with the d + Au data as shown in Figure 1. The top figure includes both EKS shadowing [1] and NDSG shadowing [2] at mid-rapidity. The bottom figure is the same at forward rapidity.

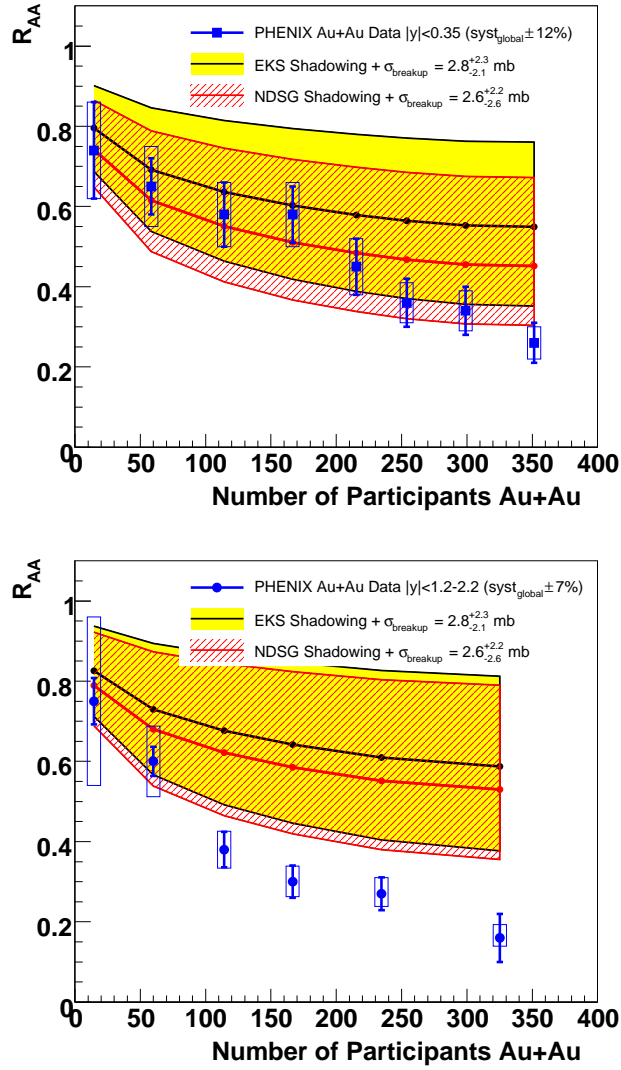


FIG. 4: (color online) R_{AA} for Au+Au [4] collisions compared to a band of theoretical curves for the σ_{breakup} values found to be consistent with the d + Au data as shown in Figure 1. The top figure includes both EKS shadowing [1] and NDsg shadowing [2] at mid-rapidity. The bottom figure is the same at forward rapidity.

- [1] K. J. Eskola, V. J. Kolhinen, and R. Vogt, Nucl. Phys. A **696**, 729 (2001).
 [2] D. deFlorian and R. Sassot, Phys. Rev. D **69**, 074028 (2004).
 [3] A. Adare et al. (PHENIX), Phys. Rev. Lett. **101**, 122301

- (2008), nucl-ex/0801.0220.
 [4] A. Adare et al. (PHENIX), Phys. Rev. Lett. **98**, 232301 (2007), nucl-ex/0611020.